

## What is SARE?

Since 1988, the Sustainable Agriculture Research & Education (SARE) program has been the go-to USDA grants and outreach program for farmers, ranchers, researchers and educators who want to develop innovations that improve farm profitability, protect water and land, and revitalize communities. To date, SARE has awarded over \$309 million to more than 7,407 initiatives.

### SARE is grassroots with far-reaching impact

Four regional councils of expert practitioners set priorities and make grants in every state and island protectorate.

### SARE communicates results

SARE shares project results by requiring grantees to conduct outreach and grower engagement; and by maintaining an online library of practical publications, grantee-produced information products and other educational materials.



[www.sare.org](http://www.sare.org)

## SARE: Advancing the Frontier of Sustainable Agriculture in...

# South Carolina

### Project Highlight: *Fruit Bagging Reduce Reliances on Pesticides*

When Clemson University fruit specialist Juan Carlos Melgar suggested putting a paper bag over a peach to detract insects and diseases during production, farmers laughed. But when his SARE-funded trials showed that the technique protects the fruit from devastating brown rot, marauding insects like plum curculio and even hungry birds, producers and backyard growers started paying attention.

Researchers found that bagging peaches between petal fall and harvest reduces pesticide use while increasing yields and maintaining flavor. Even though it involves more labor, Melgar estimated that bagging can increase revenue by \$95 per tree in an organic system when the fruit is sold directly to consumers. "We've gotten a lot of positive responses from farmers all over the country as a result of the research study," said Melgar.

Fruit bagging for protection is a common strategy in Asia. With South Carolina ranked second in the nation behind California in peach production at 77,000 tons, researchers at Clemson felt that applying the technique to orchards was a worthwhile endeavor because peach growers in the southeastern U.S. face very high pest and disease pressures. Melgar is taking this research to a regional level with a newly acquired \$1 million USDA-NIFA grant, applying the technique to more orchards in South Carolina, Georgia and Florida.

For more information on this project, see [sare.org/projects](http://sare.org/projects), and search for project number [OS16-094](#).

## SARE in South Carolina

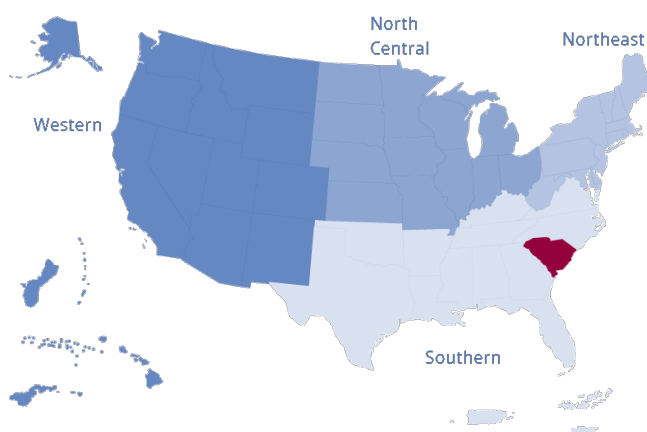
[southern.sare.org/sare-in-your-state/south-carolina](http://southern.sare.org/sare-in-your-state/south-carolina)

**\$2,586,655**  
in total funding

**57 grant projects**

(since 1988)

For a complete list of grant projects state by state, go to [www.sare.org/state-summaries](http://www.sare.org/state-summaries)



# SARE Grants in South Carolina

Total awards: 57 grants



18 Farmer/Rancher  
6 Graduate Student  
10 On Farm Research/Partnership  
10 Professional Development Program  
13 Research and Education

Total funding: \$2,586,655



\$157,270 Farmer/Rancher  
\$73,864 Graduate Student  
\$142,377 On Farm Research/Partnership  
\$568,878 Professional Development Program  
\$1,644,266 Research and Education

Find a complete list of projects on page 3.

# SARE's Impact



**53 percent**

of producers report using a new production technique after reading a SARE publication.

**79 percent**

of producers said they improved soil quality through their SARE project.

**64 percent**

of producers said their SARE project helped them achieve higher sales.

Learn about local impacts at:

[southern.sare.org/sare-in-your-state/south-carolina](http://southern.sare.org/sare-in-your-state/south-carolina)

## Contact Your SARE State Coordinator

SARE sustainable ag coordinators run state-level educational programs for Extension and other ag professionals, and many help grant applicants and recipients with planning and outreach. Visit [southern.sare.org/state-pages/south-carolina](http://southern.sare.org/state-pages/south-carolina) to learn more.

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For detailed information on SARE projects, go to [www.SARE.org](http://www.SARE.org)

SARE is funded by the USDA's National Institute of Food and Agriculture (NIFA).

This report includes summaries of competitive grant programs only. Some competitive grant programs that are no longer offered may be included or excluded from the totals in this report depending on the grant program and SARE region.



# AGRICULTURE PROJECTS FUNDED IN SOUTH CAROLINA

by USDA's  
**Sustainable Agriculture Research and Education (SARE) Program**

South Carolina has been awarded \$2,630,275 grants to support 59 projects, including but not limited to, 9 research and/or education projects, 10 professional development projects and 18 producer-led projects. South Carolina has also received additional SARE support through multi-state projects.

## RESEARCH AND EDUCATION GRANTS

Project #	Project Title	SARE Support	Project Leaders
LS19-305	Incorporating Natural, Non-toxic Arthropod Resistant Tomato Varieties into Southern Production Systems	\$299,963	Juang-Horng Chong Clemson University
LS19-306	Utility of Anaerobic Soil Disinfestation and Organic Herbicides for Weed and Disease Management in Organic Solanaceous Vegetable Systems	\$293,470	Matthew Cutulle Clemson University, CREC
LS16-273	Improving Silvopasture Systems in the South: Identification of Suitable Forage Crops and Enhancement of Environmental Quality in Upland Forests	\$135,487	Dr. John Quinn Furman University
LS09-217	Improvement of the safety of food handling practices on small farms	\$200,000	Dr. Paul Dawson Clemson University
LS06-188	Expanding the grazing season for sustainable year-round forage-finished beef production	\$163,000	Susan Duckett Clemson University
LS04-213	Development and Integration of Sustainable Agriculture Core Curriculum Training into the Southern Region Extension Education System	\$241,000	Dr. Geoff Zehnder Clemson University
LS03-155	Creating a value chain system for local and regional farm products	\$19,310	Dr. Geoff Zehnder Clemson University
LS03-157	Suppression of weeds and other pests in fresh market vegetables using wild radish cover crop	\$173,125	Jason Norsworthy Clemson University
LS93-054	Evaluation of Low-Input, No-Till, No-Herbicide Continuous Grazing System for Dairy Cows	\$118,911	Jean Bertrand Clemson University

## PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

Project #	Project Title	SARE Support	Project Leaders
ES19-150	Advanced Soil Health Training for South Carolina Agriculture Professionals	\$79,847	Dr. Geoff Zehnder Clemson University
ES17-137	Wholesale Success: Building the capacity of farmers to meet demand for locally and sustainably grown produce	\$78,008	Dr. Geoff Zehnder Clemson University

ES13-117	Training in Renewable Energy Systems for Small Farms to Reduce Energy Costs and Improve Profitability	\$78,128	Dr.Geoff Zehnder Clemson University
ES11-108	Pollinator Conservation Short Course	\$92,066	Eric Mader The Xerces Society
ES10-106	On-Farm Training in Organic Pest Management Practices for Small, Diversified Farms	\$83,775	Dr.Geoff Zehnder Clemson University
ES02-064	Calhoun Fields Laboratory: A Program for Experiential Training in Organic Farming Systems	\$49,926	Dr.Geoff Zehnder Clemson University
ES01-057	South Carolina Farm and Forest Land Conservation Training	\$25,428	Ben Boozer Clemson Institute for Economic & Community Develop
ES97-017	Overcoming Training Obstacles: A Realistic Cost-Effective Approach	\$10,000	Charles Q. Artis South Carolina State University, Community and Economic Development
ES97-018	The First Requirement of Agriculture Sustainability: Efficient Management of Available Resources	\$60,000	Charles Q. Artis South Carolina State University, Community and Economic Development
LST94-006	Extending Sustainable Agriculture Concepts and Practices to Traditional Agricultural Advisors	\$11,700	Jim Palmer Clemson

#### FARMER/RANCHER GRANTS

<b>Project #</b>	<b>Project Title</b>	<b>SARE Support</b>	<b>Project Leaders</b>
FS20-326	Summer Cover Crops for Organic No-till Broccoli	\$14,820	Sarah Belk Wild Hope Farm
FS18-309	Studying the Use of Copper to Raise Healthier Goats	\$10,000	Judy Langley Windy Hill Farm
FS17-300	Scaling Indigo Production in South Carolina	\$5,965	Kathy McCullough Farmer
FS16-288	Modified Method for Roller-Crimper No Till System in the Southeast Coastal Plain	\$8,327	Mary Connor Three Sisters Farm
FS14-284	Is freshwater fish compost as effective as saltwater fish compost on vegetable production?	\$10,000	Dale Snyder Sweetgrass Garden Co-op
FS13-276	Shade cloth for fall bearing blackberry druplet abortion/malfunction problems in southeastern USA	\$6,458	Walker Miller The Happy Berry Bunch
FS11-255	Cucumber Pollination with Bumblebees	\$8,530	David MacFawn Rawl Farms
FS11-257	Is Fish Waste Compost worth the Mess and Effort?	\$9,848	Dale Snyder Sweetgrass Garden Co-op
FS10-245	Forage Chicory Use in Rotational Grazing of Sheep to Reduce Intestinal Worms, Reduce Grain Supplementation, And Maximize Growth	\$9,078	Kathy McCaskill Old McCaskill's Farm

FS10-247	Using Buckwheat to Attract Beneficial Insects for Crop Protection	\$9,037	Daniel Parson Parson Produce
FS09-233	Dual Season Organic Asparagus Production	\$9,995	Mary Connor Three Sisters Farm
FS04-184	Edamame Variety Trials for the Local Fresh Market	\$4,777	Carolyn A. Prince
FS99-102	Cattle Lane Construction Alternatives That Enhance Intensive Grazing Systems	\$9,850	Tom Trantham Trantham's Dairy Farm
FS98-070	Red Plastic Mulch as an Alternative to Insecticides in Production of Seedless Watermelons	\$7,390	John Frazier
FS98-079	Demonstration of a Low-Input Diversified Small Farm Operation	\$9,200	Theodore Nesmith
FS95-033	Cover Crops in Integrated Vegetable Production Systems	\$9,285	Charles Wingard W.P. Rawl & Sons Farms
FS94-005	Vegetable Marketing Strategies for a Small Farm Co-op	\$10,000	Curtis Inabinett Sea Island Farmers Co-op
FS94-016	Clover Cover Crops, Weed Management and Consumer Tolerance to Insect Damage	\$4,710	Horace & Shaw Skipper The Berry Patch

#### GRADUATE STUDENT GRANTS

Project #	Project Title	SARE Support	Project Leaders
GS18-192	Cover Cropping to Improve Soil Moisture Content for the Following Cash Crop	\$16,496	Dr.Sruthi Narayanan Clemson University Ricardo St. Aime Clemson University
GS17-174	Optimizing Nutritional Management in Fruit Tree Production in Southern U.S.	\$16,441	Juan Carlos Melgar Clemson University Qi Zhou Clemson University
GS13-126	Weeds, Nitrogen, and Yield: Measuring the Effectiveness of an Organic No-Till System	\$10,927	Dr.Geoff Zehnder Clemson University David Robb Clemson University
GS04-034	Control of Soilborne Fungi with Biofumigation	\$10,000	Anthony Keinath Clemson University Samuel Njoroge Clemson University
GS04-041	Preliminary Investigation for Application of Supercritical Fluid Extraction Technology for Garlic Oil Extraction	\$10,000	Terry Walker Clemson University Meidui Dong Clemson University
GS03-020	The Assessment of Conservation and Traditional Tillage Systems on Weed Dynamics, Insect Abundance, and Northern Bobwhite Quail Life and Behavioral Patterns	\$10,000	William Bowerman Clemson University Derek Eggert Clemson University

#### ON FARM RESEARCH/PARTNERSHIP GRANTS

Project #	Project Title	SARE Support	Project Leaders
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OS20-133	The Potential of Inter-seeded Cover Crops for Enhancing Soil Health and Soil Moisture Content in a Row Crop Production System	\$20,000	Dr.Sruthi Narayanan Clemson University
OS18-118	Cover Cropping to Increase the Sustainability of Cropping Systems by Developing Soil Organic Matter, Improving Soil Health, and Suppressing Weed Growth	\$15,000	Dr.Sruthi Narayanan Clemson University
OS17-109	Identification of Factors Involved in Peach Skin Streaking	\$15,000	Guido Schnabel Clemson University
OS16-094	Fruit Bagging as a Strategy to Reduce Reliance on Pesticides for the Production of Peaches in the Southeast	\$14,967	Juan Carlos Melgar Clemson University
OS16-096	Cover Crop Influence on Stored Soil Water Availability to Subsequent Crops	\$14,995	Dr.Sruthi Narayanan Clemson University
OS16-100	Getting to the Bottom of 'Bronzing', A Peach Skin Disorder Causing Severe Losses for Organic and Conventional Peach Growers	\$15,000	Guido Schnabel Clemson University
OS16-093	Increasing Sustainability of Peanut, Cotton, and Soybean Production Systems Through Innovative Interseeding Technology to Enhance Farm Profit and Reduce Pest Occurrence	\$14,990	Dan Anco Clemson University
OS07-035	On-Farm Use of a Hybrid Vetch Cover Crop to Reduce Fusarium Wilt in Seedless Watermelon	\$9,900	Anthony Keinath Clemson University
OS03-010	Poultry Litter Research Project	\$12,600	David Gunter Clemson Extension Service
OS03-013	Growing Organic Fruits and Vegetables for Local Farmer's Markets	\$9,925	York Glover

#### SUSTAINABLE COMMUNITY INNOVATION GRANTS

<b>Project #</b>	<b>Project Title</b>	<b>SARE Support</b>	<b>Project Leaders</b>
CS12-087	Fighting Obesity in Schools By Changing Eating Habits of Students	\$10,000	Robert Behr Ashley Ridge High School
CS10-078	GrowFood Carolina	\$10,000	Lisa Turansky South Carolina Coastal Conservation League
CS08-065	Marshview Community Organic Farms - Young Farmers of the Lowcountry	\$9,700	Sara Reynolds Marshview Community Organic Farm
CS08-064	Growing the Manning Farmer's Market	\$5,050	Rebecca Rhodes City of Manning
CS07-058	Farmers Market Support Activities	\$2,570	Grady Sampson
CS07-059	Chicora Farmers Market	\$6,300	Amanda Crump Metanoia CDC

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**Total funding from the USDA SARE program to  
South Carolina  
\$2,630,275**

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For further information on projects, contact Candace Pollock, Southern SARE public relations coordinator, at (770) 412-4786 or [cpollock@uga.edu](mailto:cpollock@uga.edu).

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